

Claims

1. A method for feeding image plates (1) used in intraoral dental X-ray photography into a reading device for the images taken on the plates to be read, characterized in that the method comprises the steps of:
 - 5 - removing the plates (1) from their casings used during the photographing step,
 - inserting the plates in a housing (2) provided with a door (14) and substantially protected from light, said housing forming an intermediate storage for the plates,
 - stacking the plates to form a pack in said housing, the plates being subjected to a force pulling or pressing them towards a conveyor (9) extending to the adjacency of
 - 10 the housing, and
 - feeding the plates from said housing by means of a conveyor (9), the conveyor each time gripping the nearest plate in the pack so as to forward the plates in sequence along the feeding path.
2. A method as defined in claim 1, **characterised** in that the bottom (13) of the
 - 15 housing (2) is inclined towards the conveyor (9) so that the plates (1) in the pack are attracted towards the conveyor by force of gravity.
3. A method as defined in claim 1 or 2, **characterised** in that the pack of plates is pushed towards the conveyor (9) by means of a pushing device, such as a rolling roll (15) located behind the pack.
4. A method as defined in any of the preceding claims, **characterised** in that the
 - 20 image plates (1) comprising a magnetic metal part are attracted towards the conveyor (9) by means of a magnet (12).
5. A method as defined in any of the preceding claims, **characterised** in that the conveyor (9) transfers image plates (1) from the housing (2) onto the path of a slide
 - 25 (3) integrated in the reading device, and that the slide grips the plate entering its path each time and brings the plates one by one to the reading step.
6. A method as defined in claim 5, **characterised** in that the conveyor (9) consists of a belt or a chain conducted laterally of the housing (2).
7. A method as defined in claim 6, **characterised** in that the conveyor comprises
 - 30 a vertically moving toothed belt (9), the image plate (1) fitting between the teeth of the belt so that the belt entrains the plate by means of its teeth (16).

8. A method as defined in claim 6 or 7, **characterised** in that the belt or the chain acting as a conveyor (9) moves stepwise.

9. A method as defined in any of claims 5-8, **characterised** in that the slide (3) of the reading device makes a reciprocating movement, returning a plate (1) whose image has been read onto the conveyor (9), which subsequently removes the plate from the process.

10. A method as defined in claim 9, **characterised** in that the conveyor (9) transfers plates (1) vertically from the top to the bottom and removes read plates by letting them drop from the conveyor.

11. . An apparatus for feeding image plates (1) used in intraoral dental X-ray photography into a reading device for the images taken on the plates to be read, characterized in that the apparatus comprises a housing (2) which is provided with a door (14) and substantially protected from light, the housing forming an intermediate storage for image plates received and stacked therein, that a conveyor (9) extends to the adjacency of the housing while the plates stacked in the housing are subjected to a force pulling or pressing them towards the conveyor, and that the conveyor is provided with gripping means (16) to engage with the plates one by one, in order to forward them in sequence along the feeding path.

12. An apparatus as defined in claim 11, **characterised** in that the bottom (13) of the housing (2) is inclined towards the conveyor (9) so that the plates (1) arranged as a pack are attracted towards the conveyor by force of gravity.

13. An apparatus as defined in claim 12, **characterised** in that a freely rolling roll (15) has been disposed in the housing (2) in order to push the pack of plates towards the conveyor (9).

14. An apparatus as defined in any of claims 11-13, **characterised** in that it comprises a magnet (12) in order to attract image plates (1) equipped with a magnetic metal part towards the conveyor (9).

15. An apparatus as defined in any of claims 11-14, **characterised** in that the conveyor (9) comprises a preferably endless belt or chain which is conducted laterally of the housing (2) and moves image plates (1) in sequence onto the path of the slide (3) integrated in the reading device, and in that the slide has been disposed to grip the plate entering its path each time, bringing the plates one by one to the image reading step.

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16. An apparatus as defined in claims 14 and 15, **characterised** in that the conveyor consists of two parallel belts (9), between which at least one magnet (12) is placed to attract the image plates (1) towards the belts.

5 17. An apparatus as defined in claim 15 or 16, **characterised** in that the conveyor comprises a belt (9) which moves from the top to the bottom, and that the magnet (12) is placed at a location lower than the bottom (13) of the housing (2) so as to keep the image plates (1) in contact with the belt during the transfer of the plates.

10 18. An apparatus as defined in any of claims 11-17, **characterised** in that the conveyor is a vertically moving toothed belt (9) with a tooth interval equalling the width of an image plate (1) to allow the plate to fit in-between the teeth.

19. An apparatus as defined in any of claims 11-18, **characterised** in that it comprises a plate-like cover (11) covering the conveyor (9), allowing the image plates (1) to pass between the conveyor and the cover within an interstice dimensioned to equal the thickness of the plates.